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ABSTRACT

A physical fitness plan is considered desirable for young people, young adults, and especially older adults. This program for secondary level students focuses on the physiology of exercise and the process of aging, and stresses the need for physical fitness. Specific objectives include the following: (1) to let students become evaluators of their own exercise program in and out of school; (2) to introduce students at the secondary level to the study of adulthood and gerontology, and to the lifelong values of physical exercise; (3) to introduce the contradictions of the meaning and importance of lifelong exercies; (4) to develop a knowledge of the physiological benefits of a lifelong program; (5) to distinguish the contradictions of the past male/female roles related to a lifelong program; and (6) to introduce an account of the physiological process through the ages and the relationship of sedentary and active exercises to this program. Procedures for achieving these objectives are outlined. (KA)

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THE PHYSIOLOGY OF EXERCISE AND THE PROCESS OF AGING

by Patricia Mravetz

CG013036

UNIT TOPIC: THE PHYSIOLOGY OF EXERCISE AND THE PROCESS OF AGING

GRADE LEVEL: This unit may be adapted for use in grades 7-12.

I. INTRODUCTION

The President's Council on Physical Fitness defines physical fitness as "...the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure-time pursuits and to meet unforeseen emergencies."

A physical fitness plan is considered desirable for young people, young adults, and especially older adults; this plan is sponsored by The President's Council, YMCA, YWCA, etc. with the schools, colleges, and universities giving it lip service, if not completely whole-hearted support. Health spas with fitness plans tailored especially for the individual are capitalizing on basic needs of all persons: the unconscious realization to keep fit and trim in today's youth-oriented society, the wish to keep the body looking youthful, and the need to be admired by one's peers and superiors

Johnson and Stolberg (1971) present the criteria for fitness in another way:

Health and Fitness Criteria	Motor Performance
cardiorespiratory capacity	coordination
flexibility	agility
muscular endurance	power
muscular strength	balance
body composition	reaction time and speed

However, in terms of practical use, the AAHPER Youth Fitness Test was chosen. This test is inserted with the idea being that the tests may help the individual on his/her profile. It is in no way supposed to be used for experimental purposes. It can be a valuable tool for individual diagnosis.

II. OBJECTIVES

A. To let the students become evaluators for their own exercise program in and out of the school surroundings.

B. To introduce those students, grades 7-12, to the study of adulthood and gerontology, and to the various physical lifelong exercise values that are associated with a more successful and less painful lifespan.

C. To introduce the contradictions of the meaning and importance of lifelong exercise.

D. To develop a knowledge of the physiological benefits of a lifelong program, from birth to death.

E. To distinguish the contradictions of the past male/female roles related to a lifelong physiological exercise plan.

F. To introduce a semi-historical account of the physiological process through the ages and the relationship of sedentary and active exercises to this program.

Since this unit could be used as a physical education unit or classroom personal health unit, different activities may have to be substituted when the area in which you are working is not conducive to the plans. Perhaps the most suitable time for this unit in physical education would be in the winter when outside activities are at a minimum.

III. CONTENT AND/OR PROCEDURES

A. Lesson #1

Run tests for everyone in the class, or relevant ones for your classroom situation. (Tests can be found in section IV. Instructional Materials.)

Have charts filled out by each member of the class.

After the tests are over (based on their results), have the student evaluate in his own words orally or written what area(s) he/she needs to work on and would enjoy doing during the rest of the six weeks. In other words, some areas could be repetitive and considered "busy work" by the student; therefore, during the rest of the unit, the student's needs should be honored. In his/her evaluation, a six week's fitness plan should be outlined. Thus, the student has "tailormade" a plan of fitness for himself.

Stress the importance of individual assessment and the on-going importance of this profile past the six weeks of the unit. Perhaps a continuation could be suggested with less supervision but with periodic checks.

Carry on personal conferences to set up the profiles, leaving the "Future Plans" blank. This area will be filled in at the end of the unit in the sixth week during the final evaluation.

B. Lesson #2

Objective: After a profile is constructed, the student can search now more into the reasons for a lifelong exercise program working on individual, creative projects.

C. Lesson #3

Objective: Either at the end of three weeks or six weeks, the parents and the young persons in the class can get together; perhaps the parents will want to take certain designed tests for them and plan profiles, too. The resulting end discussion could then be fruitful for the students and their parents, enabling both to see different perspectives of the aging process.

Let the young person's parents get involved. Plan an evening when parents can build their profiles, with the understanding that unless a physical examination prior to the evening had been held or that permission was given in writing by the parents before the evening of tests and profile building, permission to actively participate could not be granted. One must be careful about the use of tests of any kind whether it is for fun during a social gathering or whatever. Too many fathers may want to prove to their sons/daughters his believed physical conditioning level. Just a word of caution is needed when undertaking such an event. There are several levels to the tests; read them thoroughly before the planning begins.

Breaking into groups. One possible grouping would be a "natural" talking time during the refreshments although adults tend to talk to adults, young persons to young persons.

Another way is to separate son/daugher, mother/father into different groups to allow for freer talk and present a specific question(s) to these groups for discussion. Examples are:

1. Do you envy the neighborhood jogger who's out running in front of your house every evening?

2. Do you think that you will take up a sport or activity "eventually" when you're convinced that you're slowing down or can afford the equipment?
3. Do you feel self-conscious in your neighborhood acting like a "jock" when everyone else is eating rich food, driving everywhere, watching TV or a movie for recreation?
4. Do you think there should be a change in the female role in regard to lifelong recreation and exercise?

D. Lesson #4

Objective: After completing all individual activities, the entire group can come back together and discuss the physiology of aging and its relationship to exercise with the use of a slide show, a short true/false questionnaire about basic physiological questions, short talks by the teacher regarding the technical information, and presentation of projects by the students.

When we talk about aging as a disease, we immediately hit a note of fear in the heart of most people. Perhaps our attitude toward it is at fault. It may be necessary as you delve into the technical content of this part of the unit to have some small discussions about the physiology of aging to show that it is not a disease. Many factors play a part in the natural aging of our bodies. This concept of "normal aging" is still a very difficult value to incorporate into the thinking of the public. Yet, the changes in the psychological, social, and physical makeups of everyone is an inevitable process, and can be discussed with your students, making them more aware of these natural changes.

The negative picture of the aged person as an invalid, a "shut-in," is not a figment of our imagination; some people fit this picture, not by their choice, but conform to this picture by choice of their societal patterns of "what's supposed to be." However, there are great numbers in this nation today of older persons who live longer, are in better health, are better educated, and are determined to live

and sustain an active life.

Let us as teachers help our students to become aware, through discussion and a final proejct, of the aging process, a process not to be dreaded, but to be dealt with as something natural.

Activities:

1. Assign a second project with classtime provided by you. This project will hopefully dovetail into the first project.
2. A vocabulary list is provided with most of the difficult words found in the technical material on physiology. Perhaps these words could be placed on large cards and hung on the walls or bulletin boards as preparation for "mini-lectures," which should not exceed 15 minutes.
3. The short questionnaire could be used anytime; it may prove to be a good discussion starter before a "mini-talk" or as a beginning to the talks which are provided for the final evaluation.

E. Lesson #5

Objective: Through small groups and total group evaluation, the perspective of the aging process can be changed, enlarged, narrowed...whatever it takes for the individual to take part actively in planning his/her future exercise and health profile.

Activities:

1. Assign young people to small groups of 4-5.
2. Start with vignettes, and ask that they write their own future plans into their health and exercise profile.
3. Have a discussion (if the class is mixed, it may be better) with a male/female stereotype in relationship to exercise as the main focus.

a. Do young girls get "programmed" that vigorous exercise is not ladylike?

b. Do these same women maintain this attitude and lead sedentary lives?

c. Do young boys get "programmed" to vigorous exercise, but a holding in of the emotions?

d. Do these same men lead perhaps a more active life, but suffer from hypertension?

e. Why does society place these particular roles on people, and is there a relationship between the roles and the acceleration of old age?

4. Another discussion group could be making up mottos for lifelong exercise for use on posters. Included are a few starters:

a. "Young at Heart"

b. "Grow, but not Old"

c. "There's exercise... and there's exercise"

d. "Add life to your years"

e. "Growing older and better"

f. "Senior Power"

g. "Re-l-a-x-x-x with Lifelong Recreation"

5. Finally, have the class together for several older adults who will lead small or large discussions on aging and exercise. Have a reporter from the school and hometown newspaper present who will take pictures and notes during the activity and write it up for publication.

6. During the final evaluation, have the students answer open-ended questions or ones of their own design which they have now developed through their research.

Suggestions for these individual projects are:

1. An "awareness" journal with the student noticing and becoming more aware of his/her impressions of the aging process; this particular project is excellent for the student to carry through the entire six weeks. The focus should be on what he/she sees young and older people doing with their lives in terms of an exercise program. Were they surprised at what they saw? Were their peers leading just as sedentary lives as their grandfathers or vice versa?
2. Some interested biology student could go into the biological aspects of aging (cell decremation, etc.); perhaps a comparison of the body now and later could be presented with posters or verbally.
3. Artistic students could develop a portfolio of all kinds of exercises they see younger and older people doing. It could turn out to be quite interesting.
4. Some students may wish to be reporters and ask questions of younger and older people, taping their answers for the class to hear.
5. Better students may want to use the reading material and present a panel about the information which would help to distribute the technical material.
6. Some students may wish to join a Vic Tanny or other health studio, perhaps to come back with direct quotes and stories about their experiences.
7. If this is a physical education class, more exercises that can be done right in the home and backyard can be shown, using popular music that the students would be listening to anyway.
8. Another project might involve a trip to a nursing home, but this project must be planned carefully so as to present all sides of the story.

Evaluation questionnaire:

a. "What was the most interesting part of our unit?"

b. "How can you evaluate the individual projects? Too many, too few?"

c. "How do you feel about the aging process? Did your attitudes change? If so, how?"

IV. INSTRUCTIONAL MATERIALS

Sources:

de Viries, Herbert A. "Age and Exercise," Physiology of Exercise, Dubuque, Iowa: Wm. C. Brown Company Publishers, 1974.

de Viries, Herbert A. in Aging, eds. Diana Woodruff and James Birren. New York: D. Van Nostrand Company, 1975.

The effects of conditioning aids the aging process, but is only a part of it. The causal relationships of any changes, nervous, digestive, availability of oxygen, comsumptive, circulatory, cardiac output - all of these only accompany the aging process. De Vries in "Age and Exercise" from Physiology of Exercise explains the changes in functional capacities made upon differing groups of subjects at increasing age levels may be the results of a combination of three factors: 1) true aging phenomena, 2) unrecognized disease process whose incidence and severity increase with age, and 3) disuse phenomena or the increasing sedentary nature of our life styles as we grow older.

Reasoning for adolescent exercise programs starts with the need for the individual to develop the greatest physical potential of his body besides learning to form a foundation for exercise habits in later years.

Reasoning for the mature program in exercise starts with the need for daily activity to be encouraged instead of spectatoritis. Many of the activities developed by the adolescent can be successfully carried through adulthood while maintaining good cardiovascular and stamina levels. Any layoff from the program

needs a steady, progressive rebuildup to the former competency, unlike the adolescent program. An older person can improve himself through exercise and physical conditioning as well as the young person. The effects on middle-aged and older people are opposite of those commonly associated with the aging process.

Summary points about older people and their exercise program:

1. In age-related losses, the aging process (including disuse of physical potential and the addition of diagnosed degenerative disease) is influential.
2. Older people feel a loss of vigor which can be attributed to the loss of aerobic capacity of the individual.
3. The "bed rest" studies, which produced physiological changes in a matter of weeks in young, well-conditioned individuals have produced evidence that losses may be ever more related to the decreased activity of the individual than to aging itself!
4. Many middle aged and older healthy men and women can be physically conditioned as well as adolescents although they begin at lower achievement levels.
5. These training effects can prove beneficial in the areas of cardiovascular and respiratory systems; an offshoot has been a decreased percentage of body fat, lowered blood pressure, and better readiness to achieve neuromuscular relaxation.
6. Professional "examinations" are essential for the older persons who wish to start an exercise program.
7. Everyone in an exercise program, young or old, should be able to take his own pulse, in relation to the maximum level at his particular age level.
8. Walking, then jogging with the supervision of a professional can be an early positive stimulus for an elderly person who wishes to begin an

exercise program.

9. The elderly should activate small muscle masses and static (isometric) contractions. This can best be done by walking, jogging, running, and swimming.

A. AAHPER YOUTH FITNESS TEST

The AAHPER Youth Fitness Test Project represented the first attempt by the physical education profession to establish national norms. The test battery was originally developed in 1957 by a special committee of the AAHPER Research Council.

In selecting the test items, the committee was guided by the following criteria: the tests should be reasonably familiar; the tests should require little or no equipment; the tests could be administered to the entire age range of grades five through twelve; the tests should measure different components of fitness; and the tests could be given to both boys and girls. The exception to the last criterion is the pullups test.

Validity and Reliability: It was emphasized that in selecting the tests the major consideration was placed on what each test item indicated rather than in the test item itself. The planning committee agreed upon the seven-item battery as representing measures of strength, endurance, and agility, and proficiency in running, jumping, and throwing. The intercorrelations among the items are low, indicating that they are measuring separate elements.

Test Items: The AAHPER Youth Fitness Test is made up of physical fitness items and motor fitness items. Since some of these items have been presented in other chapters under the specific quality that they measure, with the exception of three items, they are listed with the chapter locations below. The remaining test items are described herein.

Physical Fitness Items: (a) Pull-up (boys) "The Measurement of Muscular Endurance." (b) Flexed arm hang (girls) "The Measurement of Muscular Endurance." (c) Sit-up--described below. (d) Six hundred yard run-walk, "The Measurement of Cardiovascular Condition."

Motor Fitness Items: (a) Shuttle run--described below. (b) Fifty yard dash, "The Measurement of Speed and Reaction." (c) Softball throw--described below. (d) Standing broad jump, "The Measurement of Power."

Sit-ups. To measure the efficiency of the abdominal and hip flexor muscles.

Equipment: Mat or floor.

Directions: The subject lies on his back with his legs straight and about two feet apart. His hands are placed behind his neck with the fingers interlaced. A partner holds the subject's ankles so that his heels are in contact with the floor or mat at all times. The subject sits up, twisting his trunk to the left to touch his right elbow to the left knee. He then returns to the starting position, making sure that his elbows are flat on the mat or floor before sitting up again. The subjects sits up and twists to the right in order to touch his right knee with his left elbow. The subject then repeats the exercise, alternating to the right or left each time. The fingers must remain in contact throughout the exercise, and the neck leading so as to curl up. The knees should remain on the mat or floor as the subject sits up, but they may bend slightly when the elbow touches the knee.

Scoring: Each movement of sitting up, touching elbow to knee, and returning to the mat counts one point. The maximum number of sit-ups is 100 for boys and fifty for girls. Any sit-up in which the fingertips come apart, or the knees bend, or the subject pushes off the mat from an elbow is not counted, and the subject should be told of the infraction.

Shuttle Run. To measure speed and change of direction.

Equipment: Each station needs two blocks of wood, 2 by 2 by 4 inches, and a stopwatch. A 30 foot running area is needed. The width of a volleyball court is appropriate.

Directions: The subject starts from a standing position behind one of the lines. Behind the other line are placed two blocks of wood. At the starting signal, the subject races to the blocks, picks one up, and runs back to the starting line. He places (not throws) the wooden block behind the starting line, runs back and picks up the remaining wooden block, then carries it across the starting line. In all, the distance is crossed four times making a total distance of 120 feet, or 40 yards. Two trials are given with some rest between trials.

Scoring: The time to the nearest tenth of a second of the better of two trials is the score for this event.

Additional Pointers: (a) To facilitate testing, the runners should be divided so half start from one side and half from the other side. Starting them alternately eliminates carrying the blocks of wood back each time. (b) The tester should standardize procedures for the placement of the first block by the subject. He should not be allowed to drop it or throw it. (c) If a watch with a split-second timer is used, or if two stopwatches are available, the tester can run two subjects at a time.

Safety Precautions: The importance of adequate footwear should be stressed, as well as the need to keep the running lanes clear.

Standing Broad Jump. To measure explosive power of the leg extensors.

Equipment: A mat, outdoor jumping pit, or perhaps simply the floor itself may be used. A tape measure or marked surface is needed also.

Softball Throw for Distance. To measure skill and coordination.

Equipment: Softball (preferably several in good condition), tape measure, and small metal or wooden marking stakers are needed. A football field that is marked in 5 yard intervals serves nicely for this event.

Directions: The subject must throw from within a 6 foot restraining area which is drawn parallel to the 5 yard field markers. The ball's point of contact is marked. If his second or third throw is farther, the marker is moved. Three trials are given. It is advised that a group of approximately five students be tested together, and that after completing the third throw, each subject should jog out and stand at his marker while the measurements are being taken. In this way the possibility of recording the wrong score is reduced.

Scoring: The distance to the nearest foot of the best of three trials is the score. The measurement is made at right angles from the point of landing to the restraining line. In other words, the tape is not swung in an arc for each throw.

B. YOUR EXERCISE PROGRAM—RED, WHITE OR BLUE?

In this "reasonable" exercise program planned for you, there are three series of exercises, graded according to their difficulty or the amount of stress involved. They are identified as the RED, the WHITE, and the BLUE programs, with RED the easiest, WHITE next, and BLUE the most difficult and sustained. They let you start where you should, and they provide for an easy progression as you improve your physical condition.

Each of these three exercise programs is designed to give you a balanced workout, utilizing all major muscle groups. Performing your program regularly will lead to improvement in the various components of physical fitness, especially in functioning of the heart and lungs.

As you grow proficient at the exercises in your program, you should increase the number of repetitions of certain exercises, and increase the duration and speed of walking and jogging.

As you become able to increase the number of repetitions and handle more complicated and demanding exercises, you can move up the next level with new confidence and a growing feeling of well-being.

Which Series?

How do you know where to start? Are you a Red, a White, or a Blue?

First, you should ask your physician for advice. Discuss your plans with your own doctor (or public health clinic physician) and follow his recommendations. Take this booklet along to show him. Ask him to review the program recommended here and to advise you accordingly. Also give yourself the following simple tests to determine your present condition and your exercise tolerance. In other words, find out just what kind of shape you are in.

The tests will help you select your appropriate exercise level and pace. Keep in mind that there are wide variations in physical performance. Your own individual physical condition must dictate your personal exercise program.

Pre-exercise Tests

Check yourself in easy stages. First, try the walk test below.

Walk Test

The idea behind this walk test is to determine how many minutes, up to 10, you can walk briskly, without undue difficulty or discomfort, on a level surface. Test yourself outdoors preferably, but walking around the room indoors will do if necessary.

If you can finish 3 minutes, but no more, you should begin your daily exercise program with the RED level.

If you can go beyond 3 minutes, but not quite to 10 minutes, you can warm up at the RED level for a week or two, and then move up to the WHITE level.

If you can breeze through the whole 10 minutes, you are ready for bigger things. Rest awhile, or wait until the next day, and then take "Walk-Jog Test #1".

One note of caution. If at any time during the Walk Test you experience any trembling, nausea, extreme breathlessness, pounding in the head or pain in the chest, STOP immediately. These are signs that you have reached your present level of exercise tolerance. Start your keep-fit program at the corresponding level described in relation to this test. If these symptoms persist beyond a point of temporary discomfort, check with your physician.

Walk Jog Test #1

This test consists of alternately walking 50 steps and jogging 50 steps for a total of 6 minutes. Read instructions under Exercise #2 and the section of Jogging before undertaking this test.

Walk at the rate of 120 steps per minute; that is, your left foot strikes the ground once each second. Jog at the rate of 144 steps per minute; your left foot hits the ground 18 times every 15 seconds. Time your walking and jogging intervals for 15 seconds occasionally to check your pace.

If you stop this test before the 6 minutes are up, plan your schedule of exercises at the WHITE level.

If you complete the 6-minute walk-jog test without difficulty, you can probably undertake the BLUE level. It might be well to warm up for a week or two on the WHITE program first, however.

If you can perform this test without difficulty and feel you are capable of a more rigorous trial, rest a day, and then take "Walk-Jog Test #2".

Walk-Jog Test #2

This test consists of alternately walking 100 steps and jogging 100 steps for a total of 10 minutes. Follow the directions and use the same rates of speed—walking and jogging—as described for Walk-Jog Test #1.

If you complete this 10-minute test without difficulty, you can obviously handle the BLUE program in this book, and might want to consider going beyond it to more advanced exercises contained in another publication of the President's Council on Physical Fitness. See note on Adult Physical Fitness—A Program for Men and Women.

If you do not complete the 10-minute walk-jog, better stay with the BLUE level for awhile, after warming up a few days on the WHITE program.

Keep an Exercise Schedule

Now that you've tested yourself and determined where to begin, schedule a definite period for your basic exercises every day and stick with it.

This means setting aside 30 minutes to an hour a day for a planned program of physical activity. You should consider your exercises just as important as eating a proper diet or keeping clean.

General Directions--All Levels

The exercises in this program are not grades separately for men and women but are tailored to individuals. A couple can do the exercises together. More than likely, however, a man who has been active can start at a higher level or progress faster than most of the women who undertake the program.

Begin very easily and increase the tempo and number of repetitions very gradually. This will keep stiffness and soreness to a minumum. If you do get a little stiff during the first few days, don't let it slow you down; the stiffness will soon be overcome and it is an indication that you needed the activity.

Follow the directions for your exercise exactly. If, for example, you are at the RED level and a particular exercise should be performed only twice as a starter, stop after two repetitions--even though you may feel you can do many more. A warm-up is built into each exercise series. Therefore, the exercises should be performed in the order presented to give best results.

Keep a record of the exercises you perform, and how many times you repeat them. The little extra time required to keep a record of your activities and to set more and more challenging goals for yourself is well spent. A fitness program should be carefully designed and carefully followed. The best way to keep

track of each day's performance is to write it down. The exercise schedules outlined in this booklet will be more beneficial to you if you keep good records.

One way of adding to the fun of your exercise program is to play music while you are exercising. You can select lively tunes and find music that fits the tempo of the various movements. This is particularly interesting when walking or jogging indoors. Some people also enjoy exercising while watching TV.

You can exercise with family and friends. Many groups get together in each other's homes or at a local center or club.

Wear comfortable clothing. Avoid tight-fitting, restrictive clothes, although, if you feel more comfortable wearing foundation garments, do so. Shorts or slacks, T-shirts or short-sleeved blouses are usually desirable. Wear well-fitting shoes with non-slip soles and low (or no) heels.

Specific Instructions for Individual Programs--Red--White--Blue

Red Program

Try to complete the entire sequence without undue rest periods between exercises, but, of course, rest awhile if you feel overtaxed. One indication of improvement in condition is the ability to go through the workout in less and less time (up to a point), which means doing the exercises at a faster cadence and resting shorter periods between exercises. However, never let the effort to increase speed cause jerky movements or otherwise interfere with correct performance of the exercise.

For the first week at least, perform only the smallest number of repetitions or shortest duration of time shown for each exercise under its illustration. If you find even this amount to be strenuous, or if you feel fatigued at the end of the week, do not increase the repetitions or duration but continue at the same pace for another week.

After the first week--or as you are ready--in each exercise where a range of repetitions is shown, increase the mininum by one. Do this number, but no more,

the second week. (If you need to stay at the lowest count, as explained above, don't increase the count at all.) In the following weeks, gradually increase the number of repetitions as you feel you can. Most people should take 3 to 4 weeks to reach the highest counts in the RED program.

After you reach the point where you can do the higher number of repetitions shown for each exercise, continue on the RED level until you can complete the whole series without resting between exercises.

When you can do this for 3 days in a row, move on to the White level.

White Program

When you are ready to undertake the WHITE level, proceed in a fashion similar to your Red Program. That is, start at the lowest frequency of repetitions and gradually work up.

Most people should remain at the WHITE level for 3 to 5 weeks before moving to the Blue.

After you pass your "prove out" test by performing all of the WHITE exercises at the highest frequency shown without resting in between for three consecutive workouts, move on to the Blue level.

Blue Program

Follow the same directions as for the Red and White programs. Start slowly; step up activity gradually.

When you reach the upper limits of the BLUE exercises and can go through the workout without stopping on 3 straight days, you are ready to tackle bigger things. At this point you can (1) continue with the exercises in this book, gradually increasing the number and speed of repetitions, the distances walked and jogged, and also engage in more sports and recreational activities; or (2) obtain a copy of Adult Physical Fitness—A Program for Men and Women, which includes more difficult exercises, and advance to its level one without going through its

orientation level.

If you decide to "graduate" to the advanced publication, remember to keep working faithfully at your BLUE Program until the new book arrives.

Important Note

Most, but NOT All, of the exercies illustrated on the next pages are included in all three Exercise Programs—the Red, White, and Blue; but the same order IS NOT followed in the three programs.

Do only those exercises included in your program level, as indicated by color blocks.

Perform your exercises in the order indicated for your program.

Keeping Score

Two of your most important pieces of fitness equipment are the pencil and paper with which you keep a continuous record of your status and progress. In addition to a record of your special daily exercises, you should also keep account of other activity undertaken during the day. Remember that the effects of exercise in some respects are cumulative, so the day's total counts even though it may have been gained a little at a time.

On the score card opposite, you will note that various activities are given a point value. Make a chart like this for yourself to use each week.

Each day you should enter in the appropriate space the number of points you have earned through all the activities you have engaged in during that day. Activities have been grouped in several categories and you should try to gain credits in each category.

Your total number of points should gradually increase as you attain higher degrees of physical condition. For example, a total of 10 points per day or 70 per week would be satisfactory for someone on the RED level. The top of the BLUE level would give you 20 points per day or 125 per week. Once there, you can push on with an advanced schedule of activities (call it BLUE +) to earn 25 points per day or 150 per week. This level will keep you fairly vigorous.

These point values are approximations based upon the clinical experience of exercise specialists. Sufficient research data are not yet available to pinpoint more specific and final figures. So set your own goals according to the way you feel. But don't underestimate your vitality--and keep increasing the total points achieved each day until you become one of the "lively ones." Then stay that way.

GOALS

Add your points daily, but classify yourself according to your weekly total. As you will notice, most weekly goals allow you some time off for good (active) behavior.

Physical Activity Level	Points Per Day	Points Per Week
RED	10	70
WHITE	15	100
BLUE	20	125
BLUE +	25	150

AAHPER Youth Fitness Test

SIT-UPS FOR BOYS

Percentile Scores Based on Age/Test Scores in Number of Sit-Ups

Percentile	Age 10	11	12	13	14	15	16	17	Percentile
100th	100	100	100	100	100	100	100	100	100th
95th	100	100	100	100	100	100	100	100	95th
90th	100	100	100	100	100	100	100	100	90th
85th	100	100	100	100	100	100	100	100	85th
80th	76	89	100	100	100	100	100	100	80th
75th	65	73	93	100	100	100	100	100	75th
70th	57	60	75	99	100	100	100	100	70th
65th	51	55	70	90	99	100	99	99	65th
60th	50	50	59	75	99	99	99	85	60th
55th	49	50	52	70	77	90	85	77	55th
50th	41	46	50	60	70	80	78	70	50th
45th	37	40	49	53	62	70	70	62	45th
40th	34	35	42	50	60	61	63	57	40th
35th	30	31	40	50	52	54	58	51	35th
30th	28	30	35	41	50	50	50	50	30th
25th	25	26	30	38	45	49	50	45	25th
20th	23	23	28	35	40	42	42	40	20th
15th	20	20	25	30	36	39	38	35	15th
10th	15	17	20	25	30	33	34	30	10th
5th	11	12	15	20	24	27	28	23	5th
0	1	0	0	1	6	5	10	8	0

SIT-UPS FOR GIRLS

Percentile Scores Based on Age/Test Scores in Number of Sit-Ups

Percentile	Age 10	11	12	13	14	15	16	17	Percentile
100th	50	50	50	50	50	50	50	50	100th
95th	50	50	50	50	50	50	50	50	95th
90th	50	50	50	50	50	50	50	50	90th
85th	50	50	50	50	50	50	50	50	85th
80th	50	50	50	50	49	42	41	45	80th
75th	50	50	50	50	42	39	38	40	75th
70th	50	50	50	45	37	35	34	35	70th
65th	42	40	40	40	35	31	31	32	65th
60th	39	37	39	38	34	30	30	30	60th
55th	33	34	35	35	31	29	28	29	55th
50th	31	30	32	31	30	26	26	27	50th
45th	30	29	30	30	27	25	25	25	45th
40th	28	28	26	27	25	24	24	23	40th
35th	24	25	25	25	23	21	22	21	35th
30th	21	22	22	22	21	20	20	20	30th
25th	20	20	20	20	20	19	18	18	25th
20th	16	19	18	19	18	16	16	16	20th
15th	14	16	16	15	16	14	14	15	15th
10th	11	12	13	12	13	11	11	12	10th
5th	8	10	7	10	10	8	7	9	5th
0	0	0	0	0	0	0	0	0	0

AAHPER Youth Fitness Test

SHUTTLE RUN FOR BOYS

Percentile Scores Based on Age/Test Scores in Seconds and Tenths

Percentile	Age 10	11	12	13	14	15	16	17	Percentile
100th	9.0	9.0	8.5	8.0	8.3	8.0	8.1	8.0	100th
95th	10.0	10.0	9.8	9.5	9.3	9.1	9.0	8.9	95th
90th	10.2	10.1	10.0	9.8	9.5	9.3	9.1	9.0	90th
85th	10.4	10.3	10.0	9.9	9.6	9.4	9.2	9.1	85th
80th	10.5	10.4	10.2	10.0	9.8	9.5	9.3	9.2	80th
75th	10.7	10.5	10.3	10.1	9.9	9.6	9.5	9.3	75th
70th	10.8	10.7	10.5	10.2	9.9	9.7	9.5	9.4	70th
65th	10.9	10.8	10.6	10.3	10.0	9.8	9.6	9.5	65th
60th	11.0	10.9	10.7	10.4	10.0	9.8	9.7	9.6	60th
55th	11.0	11.0	10.9	10.5	10.2	9.9	9.8	9.7	55th
50th	11.2	11.1	11.0	10.6	10.2	10.0	9.9	9.8	50th
45th	11.4	11.2	11.0	10.8	10.3	10.0	10.0	9.9	45th
40th	11.5	11.3	11.1	10.9	10.5	10.1	10.0	10.0	40th
35th	11.6	11.4	11.3	11.0	10.5	10.2	10.1	10.0	35th
30th	11.8	11.6	11.5	11.1	10.7	10.3	10.2	10.1	30th
25th	12.0	11.8	11.6	11.3	10.9	10.5	10.4	10.4	25th
20th	12.0	12.0	11.9	11.5	11.0	10.6	10.5	10.6	20th
15th	12.2	12.1	12.0	11.8	11.2	10.9	10.8	10.9	15th
10th	12.6	12.4	12.4	12.0	11.5	11.1	11.1	11.2	10th
5th	13.1	13.0	13.0	12.5	12.0	11.7	11.5	11.7	5th
0	15.0	20.0	22.0	16.0	16.0	16.6	16.7	14.0	0

SHUTTLE RUN FOR GIRLS

Percentile Scores Based on Age/Test Scores in Seconds and Tenths

Percentile	Age 10	11	12	13	14	15	16	17	Percentile
100th	8.5	8.8	9.0	8.3	9.0	3.0	8.3	9.0	100th
95th	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	95th
90th	10.5	10.2	10.2	10.2	10.3	10.3	10.2	10.3	90th
85th	10.8	10.6	10.5	10.5	10.4	10.5	10.4	10.4	85th
80th	11.0	10.9	10.8	10.8	10.5	10.7	10.6	10.5	80th
75th	11.0	11.0	10.9	10.8	10.8	10.9	10.8	10.8	75th
70th	11.1	11.0	11.0	11.0	10.8	11.0	10.9	10.8	70th
65th	11.4	11.2	11.2	11.0	10.9	11.0	11.0	11.0	65th
60th	11.5	11.4	11.3	11.1	11.0	11.1	11.0	11.0	60th
55th	11.8	11.8	11.5	11.3	11.1	11.2	11.2	11.1	55th
50th	11.9	11.7	11.6	11.4	11.3	11.3	11.2	11.2	50th
45th	12.0	11.8	11.8	11.6	11.4	11.5	11.4	11.4	45th
40th	12.0	12.0	11.9	11.8	11.5	11.6	11.5	11.5	40th
35th	12.1	12.0	12.0	12.0	11.7	11.8	11.8	11.6	35th
30th	12.4	12.1	12.1	12.0	12.0	11.9	12.0	11.8	30th
25th	12.6	12.4	12.3	12.2	12.0	12.0	12.0	12.0	25th
20th	12.8	12.6	12.5	12.5	12.3	12.3	12.2	12.0	20th
15th	13.0	13.0	12.9	13.0	12.6	12.5	12.5	12.3	15th
10th	13.1	13.4	13.2	13.3	13.1	13.0	13.0	13.0	10th
5th	14.0	14.1	13.9	14.0	13.9	13.5	13.9	13.8	5th
0	16.6	18.5	19.8	18.5	17.6	16.0	17.6	20.0	0

AAHPER Youth Fitness Test

SOFTBALL THROW FOR BOYS

Percentile Scores Based on Age/Test Scores in Feet

Percentile	Age 10	11	12	13	14	15	16	17	Percentile
100th	175	205	207	245	246	250	271	291	100th
95th	138	151	165	195	208	221	238	249	95th
90th	127	141	156	183	195	210	222	235	90th
85th	122	136	150	175	187	204	213	226	85th
80th	118	129	145	168	181	198	207	218	80th
75th	114	126	141	163	176	192	201	213	75th
70th	109	121	136	157	172	189	197	207	70th
65th	105	119	133	152	168	184	194	203	65th
60th	102	115	129	147	165	180	189	198	60th
55th	98	113	124	142	160	175	185	195	55th
50th	96	111	120	140	155	171	180	190	50th
45th	93	108	119	135	150	167	175	185	45th
40th	91	105	115	131	146	165	172	180	40th
35th	89	101	112	128	141	160	168	176	35th
30th	84	98	110	125	138	156	165	171	30th
25th	81	94	106	120	133	152	160	163	25th
20th	78	90	103	115	127	147	153	155	20th
15th	73	85	97	110	122	141	147	150	15th
10th	69	78	92	101	112	135	141	141	10th
5th	60	70	76	88	102	123	127	117	5th
0	35	14	25	50	31	60	30	31	0

SOFTBALL THROW FOR GIRLS

Percentile Scores Based on Age/Test Scores in Feet

Percentile	Age 10	11	12	13	14	15	16	17	Percentile
100th	167	141	159	150	156	165	175	183	100th
95th	84	95	103	111	114	120	123	120	95th
90th	76	86	96	102	103	110	113	108	90th
85th	71	81	90	94	100	105	104	102	85th
80th	69	77	85	90	95	100	98	98	80th
75th	65	74	80	86	90	95	92	93	75th
70th	60	71	76	82	87	90	89	90	70th
65th	57	68	74	79	84	87	85	87	65th
60th	54	64	70	75	80	84	81	82	60th
55th	52	62	67	73	78	82	78	80	55th
50th	50	59	64	70	75	78	75	75	50th
45th	48	57	61	68	72	75	74	74	45th
40th	46	55	59	65	70	73	71	71	40th
35th	45	52	57	63	68	69	69	69	35th
30th	42	50	54	60	65	66	66	66	30th
25th	40	48	50	57	61	64	63	62	25th
20th	37	44	48	53	59	60	60	58	20th
15th	34	40	45	49	54	58	55	52	15th
10th	30	37	41	45	50	51	50	48	10th
5th	21	32	37	36	45	45	45	40	5th
0	8	13	20	20	25	12	8	20	0

AAHPER Youth Fitness Test

PHYSICAL FITNESS TEST NORMS

Percentile Scores for College Men

Percentile	Pull-up	Sit-up	Shuttle Run	Standing Broad Jump	50 Yard Dash	Softball Throw	600 Yard Run-Walk
100th	20	100	8.3	9' 6"	5.5	315	1:12
95th	12	99	9.0	8' 5"	6.1	239	1:35
90th	10	97	9.1	8' 2"	6.2	226	1:38
85th	10	79	9.1	7'11"	6.3	217	1:40
80th	9	68	9.2	7'10"	6.4	211	1:42
75th	8	61	9.4	7' 8"	6.5	206	1:44
70th	8	58	9.5	7' 7"	6.5	200	1:45
65th	7	52	9.5	7' 6"	6.6	196	1:47
60th	7	51	9.6	7' 5"	6.6	192	1:49
55th	6	50	9.6	7' 4"	6.7	188	1:50
50th	6	47	9.7	7' 3"	6.8	184	1:52
45th	5	44	9.8	7' 1"	6.8	180	1:53
40th	5	41	9.9	7' 0"	6.9	176	1:55
35th	4	38	10.0	6'11"	7.0	17[illegible]	1:57
30th	4	36	10.0	6'10"	7.0	166	1:59
25th	3	34	10.1	6' 9"	7.1	161	2:01
20th	3	31	10.2	6' 7"	7.1	156	2:05
15th	2	29	10.4	6' 5"	7.2	150	2:09
10th	1	26	10.6	6' 2"	7.5	140	2:15
5th	0	22	11.1	5'10"	7.7	125	2:25
0	0	0	13.9	4' 2"	9.1	55	3:43

Percentile Scores for College Women

Percentile	Modified Pull-up	Sit-up	Shuttle Run	Standing Broad Jump	50 Yard Dash	Softball Throw	600 Yard Run-Walk
100th	40	50	7.5	7'10"	5.4	184	1:49
95th	39	43	10.2	6' 6"	7.3	115	2:19
90th	38	35	10.5	6' 3"	7.6	103	2:27
85th	33	31	10.7	6' 1"	7.7	96	2:32
80th	30	29	10.9	5'11"	7.8	90	2:37
75th	28	27	11.0	5'10"	7.9	86	2:41
70th	26	25	11.1	5' 8"	8.0	82	2:44
65th	24	24	11.2	5' 7"	8.1	79	2:48
60th	22	22	11.3	5' 6"	8.2	76	2:51
55th	21	21	11.5	5' 5"	8.3	73	2:54
50th	20	20	11.6	5' 4"	8.4	70	2:58
45th	18	19	11.7	5' 3"	8.6	67	3:01
40th	17	18	11.9	5' 2"	8.7	65	3:05
35th	16	16	12.0	5' 0"	8.8	62	3:08
30th	15	15	12.1	4'11"	9.0	59	3:13
25th	13	14	12.2	4'10"	9.1	57	3:18
20th	12	13	12.4	4' 8"	9.2	54	3:23
15th	11	11	12.6	4' 7"	9.4	51	3.29
10th	9	9	12.9	4' 5"	9.7	47	3:38
5th	7	7	13.4	4' 1"	10.1	42	3:53
0	0	0	17.3	2' 3"	13.7	5	5:29

Daily Physical Activity Score Card

IN ORDER to receive credit for the variety of activities you may participate in each day, the following classification and scoring system is provided. Determine your daily physical activity score by adding up the time you spend performing various activities during the day according to categories listed below.

After adding up the approximate time spent on a tivities in each category, give yourself the appropria number of points acquired in each category and tot them. Do not exceed the maximum allowable poin for categories 2 and 3.

	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Total for wo
1. Your Basic Daily Exercise Program **For performing any of the following activities, give yourself the points listed.** ☐ **RED exercise program = 5 points** ☐ **WHITE exercise program = 10** ☐ **BLUE exercise program = 12** ☐ **BLUE + exercise program, or other programs such as Adult Physical Fitness, jogging and calisthenics, swimming, or YMCA keep-fit programs, lasting 30 minutes or more = 15–19**								

2. Light Activities Give yourself 1 point for each hour spent in the following type activities. Maximum allowable points per day = 3 —Personal care—dressing, washing, shaving —Sitting and actively rocking, typing, writing, playing cards, peeling potatoes, polishing shoes, sewing, playing musical instrument —Standing or slowly moving around room or yard —Shooting pool, shuffle board	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Tot for w

3. Light-Moderate Activities Give yourself 2 points for each 30 minutes spent in the following type activities. Maximum allowable points per day = 8 —Domestic work—sweeping floors, ironing, washing clothes, making beds —Light gardening, mowing lawn (power mower), washing automobile —Light industrial work—auto repair, store clerk (not lifting), building with wood, painting, shoe repairing —Walking on level at slow pace (2-3 mph) or down stairs —Bicycling on level at easy pace (5½ mph) —Canoeing slowly (2½-3 mph) —Pitching horseshoes, playing golf with cart, archery, bowling								

	Mon	Tue	Wed	Thur	Fri	Sat	Sun	To for w
4. Moderate Activities **Give yourself 4 points for each 30 minutes spent in the following type activities. Maximum allowable points per day = 12** **—Gardening—pulling weeds, digging, mowing lawn (not motorized)** **—Mopping-scrubbing floor** **—Walking on level briskly (3½-4 mph)** **—Walking up and down small hills, in sand** **—Playing ping pong, golf without cart, badminton, volleyball, or tennis (doubles)** **—Canoeing briskly (4 mph) or rowing for pleasure** **—Dancing—Fox trot, waltz, square**								
5. Heavy activities **Give yourself 8 points for each 30 minutes spent in the following type activities. No maximum.** **—Walking upstairs, up hills, or climbing** **—Bicycling briskly or up and down hills** **—Playing tennis (singles)** **—Water skiing** **—Cross country snow skiing** **—Chopping wood, digging holes, shoveling snow**								

Want to Read More?

Adult Physical Fitness—A Program for Men and Women,
a President's Council on Physical Fitness publication, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, 35 cents.

Exercise and Fitness,
available from the Department of Health Education, Division of Socio-Economic Activities, American Medical Association, Chicago, IL, 10 cents.

Exercise and Weight Control,
single copies available free from the President's Council on Physical Fitness and Sports, Washington, D.C. 20201.

Physical Fitness,
available from the Department of Health Education, Division of Socio-Economic Activities, American Medical Association, Chicago, IL, 5 cents.

Food for Fitness,
a U.S. Department of Agriculture publication, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, 5 cents.

For Information on programs of the Administration on Aging
write to: Director, Public Information, AoA, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201.

FITNESS PROFILE OF _____

1. Approximately how many hours do you spend in sedentary activities? (watching TV, radio listening, stereo listening, reading) _____
2. Approximately how many hours do you spend in active events? (running, swimming, exercising at home, etc.) _____
3. Sports activities I spend time doing at least twice a week. _____

_____

Health and Fitness Criteria	Motor Performance
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Six Weeks' Plans	Rest of the Year Plans
1.	
2.	
3.	
4.	
5.	
6.	

Future Plans

1. Sports or activities in which I plan to take lessons. _____

_____

2. Sports or activities I know I can participate in the rest of my life and plan to do so. _____

C. Source: Weg, Ruth. "Changing Physiology of Aging: Normal and Pathological" in Aging, eds. Diana Woodruff and James Birren. New York: D. Van Nostrand Company, 1975.

Physiological Changes: The human race has lived constantly with the conflict between two concepts - that of the acceptance of old age as the inevitable end of life and that of a powerful drive to longevity, perhaps immortality.

Cicero did not see aging as a disease, carefully mentioning the crux of his argument as the attitude by which we accept aging, and how we live through it. Aristotle also saw aging in an interesting way: "...aging is not a disease because it is not contrary to nature."

Available data about functional changes with age is a fairly new result. Up to the middle 1950's, only comparison studies had been done with healthy young college adults and ill, institutionalized older adults. More longitudinal studies showing changes in physiology with age, have been developed since then. Shock, of the Gerontology Research Center, began a study in 1958; 600 healthy males between 20 and 96 who lived in the community were researched. Birren of the National Institute of Health also started a longitudinal study in 1958. The third study was undertaken at Duke Center for the Study of Aging in 1955 with persons 60 to 90 years of age; the study was completed in 1973. The Duke Center finished another study begun in 1968 with persons 46 to 70 years of age. Included are concepts that can be generalized from these and other major studies on physiological changes of the aged.

Concepts:

1. Changes are gradual - they go on all during the adult life. An individual can survive with 49% of the liver, fractions of the stomach and intestines, one lung, one kidney, in part explainable by the enormous amount of redundance of tissue and organ system capacity of the body.

2. Interacting systems between nerve and nerve, nerve and muscle, nerve and gland, is an important concept. Very significant changes between young and old occur here.

3. Individual differences and aging rates play a big part in determining decrement and decline. Each with a unique heredity, the aging person can only be generalized to average scores in every area.

4. Disease vulnerability - Older people are more vulnerable to disease; three major killers are: cardiovascular disease, cancer, and cerebral accidents. The causes of these diseases have their etiology in young adult years, and are frequently diagnosed in the middle years.

5. Homeostasis (the ability to respond to physical and emotional stress) is important because older persons have trouble returning to pre-stress level after any type of stress; the rate of recovery is slower with increasing age. Environmental temperature change recovery is also slow, whether it be a cold or hot situation. Shattuck and Hilferty found that death by heat stroke rose sharply after 60: 8/100,000 deaths between 70 and 79 to 80/100,000 between 80 and 90 years.

Changes with time: Age-related changes have contributed to a negative image - wrinkles, pigmentation (liver spots), thinning, gray hair, bent frame, cataracts on eyes. These changes do occur, and gerontologists agree with this steady decline with age (1 percent per year in adult life), but it has been successfully demonstrated that not all functional changes that we see in older persons are due to aging; Butler (1975) sees some of these basic changes as pathological and some by the misuse or disease of the body.

Tissue changes: bone - decrease in bone mass, loss of elasticity of the bone and joints. Muscle - size and strength decrease with age. Tone and strength appear to peak between 20 and 30 years, then decline gradually but steadily. Nervous

sensory - taste and smell diminishes, and this affects the appetite. Vision is impaired which necessitates the use of glasses for many persons. Loss in audition (particularly of higher frequencies) begins in adolescence and appears to peak at 40 and 50 years. An increased pain threshold tends to be another sensory change. To summarize, there is a declining capacity for awareness and internalization of environmental stimuli, a likewise decrease in adaptation to this environment. Cellular changes - occurs at a steady rate throughout the entire aging process.

Systemic changes: The pulmonary system brings on a reduction in breathing efficiency. The building blocks and energy required for synthesis and all intermediary reactions are derived from the combusion of oxygen with food in the digestive process, containing all respiration and assimilation. When the oxygen level decreases, there is a decrease also in the reserves for all body functions. Very little evidence has been gathered on the digestive system among middle-aged and older persons in regard to nutritional deficiencies and body requirements. The loss may be a function of malnutrition rather than mouth neglect. Sweets can become a dietary staple, an apparent emotional substitute for a shrinking life space and loss of other satisfactions.

Sexual changes: The gonadal hormones decrease over time in men and women; finally a loss of fertility exists, which should not upset the person emotionally, except for cultural pressures which do place a tension here that is sometimes unreasonable. Many psychological changes do occur, however, with the adjustments of a person's mate or partner who may be at a different stage of change than the other. Many of the studies by Kinsey, Masters and Johnson, (1966, 1970) and Butler (1975) make it quite apparent that past experiences - enjoyment, frequency, and pleasure are important predictors for sexual activity in the last half of life.

Life changes: Disease need not be the inevitable companion of aging. But life changes do have an emotional and physiological impact on the aged. Mounting stress

and tensions are: loss of job, decrease of identity, change in living arrangements, loss of status, loss of friends and relatives - all these add to that stress and tax homeostasis which could lead to the breakdown of adaptability and disease. However, physiological, psychological, and sociological changes with time do not make aging a disease. Nevertheless, it is true that morbidity and mortality go up with age.

New words - physiology:

1. atrophy
2. biochemical changes
3. cardiovascular
4. chronic disease
5. decrement
6. dysfunctional
7. elasticity
8. gerontology
9. homeostasis
10. metabolite
11. obesity
12. pathology
13. physiology
14. pigmentation
15. proprioception
16. regenerative capacity
17. senility
18. skeletal
19. visual acuity

SHORT QUESTIONNAIRE FOR INFORMAL DISCUSSIONS ABOUT PHYSIOLOGY

True or False

_____ 1. Aging is not a disease.

_____ 2. Older adults shouldn't indulge in sports such as skiing, basketball, scuba diving, etc. because they'll have a heart attack.

_____ 3. Older adults should slow down all activity because their bodies can't take it.

_____ 4. Older adults lose their sex drive during the aging process.

_____ 5. Careful dietary changes can reverse fatigue, irritability, and signs of "senility."

_____ 6. Older adults look to retirement as a pleasant time to enjoy all kinds of activities they never had time to do before.

_____ 7. Genetic failures of the body cannot be controlled, and personality rarely changes with age.

_____ 8. Immune capacity breaks down with age.

_____ 9. Overweight people have an increased mortality risk even in much younger years.

_____ 10. Old age has been depicted as a powerful drive toward longevity, even mortality.

One can grow old with little or no pathology - a big order that cannot be promised but there are ways to help that promise along:

1. Maintain a societal role if at all possible.
2. Hold a positive view of life and positive self-image; have a goal.
3. Have a moderately good physical function.
4. Be a non-smoker.

A careful examination would show of "successful" agers to this point that the capacity to age depends on one's heredity, exercise and nutrition, the intellectual and affective pursuits, the interaction with the human and physical environments and in a nutshell - total life style started in adolescence continuing throughout the early, middle, and late years. Thus, recommendations for exercise daily to increase aerobic capacities, a thoughtful and careful dietary plan with decreased cholesterol along with an absence of smoking tend to make sense for this total life style in attaining a few extra years.

The idea of a gradual, normal aging process is difficult to incorporate; yet the interrelationships between one's emotional, physical, and societal health signal the importance of a value shift to this "normal" aging position. A more positive sign to end this section would be to say that with the restructuring of our ideas on aging and with the introduction of the information in this unit presented K-12, many people can be living longer, can be in better health, can be better educated, and can be a credit to society, and remaining involved with living longer.

D. Autobiographical Vignettes to Start Class Discussion Describing the Students' Future View of Themselves

1. Harry just sits in front of the TV after he gets home from work, drinking and snacking, then falls into bed, only to wake up in the morning and return to his daily routine. (Harry is 53, 5 feet, 10 inches, 200 lbs.)

2. Gina skis three times a year out west, plays paddle ball, bowls once a week, and swims regularly at the "Y" (She is five feet five, 115 lbs.)
3. Marilyn does her housework, watches her soap operas, has Twinkies ready for her kids who turn on the TV as soon as they rush in the door, then relaxes by reading the paper and going to sleep.
4. George finishes his job but stops by the local pub for a drink, comes home, eats a rich meal, and falls asleep on the couch immediately.
5. Candy works as a hairdresser, then goes to the indoor tennis club and plays a few sets, eats, and meets her date for a night of dancing.
6. Cathy does her housework, takes care of the children all day, swims with them for an hour at the "Y", takes them on a bicycle ride after dinner, and reads a book for relaxation that evening.

These are for fun, but also the fun might be increased if the students could draw for another person's name and write another about him/her.

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